REMARKS/ARGUMENTS

Claim Rejections – 35 USC §103

Claims 1, 5-7 and 10 were rejected under 35 USC 103(a) as being unpatentable over Yasotharan et al. (U.S. Patent Publication No. 20040120409), in view of Geile et al. (U.S. Patent Publication No. 20020012421). The rejection is respectfully traversed.

The Examiner cites Yasotharan et al. as disclosing general features of a prior art OFDM communication device, including multiplexing a training signal with transmit data. The Examiner acknowledges that Yasotharan et al. discloses neither a preamble through a low-pass filter nor a zero amplitude reduced preamble signal, but then cites Geile et al. as showing a preamble through a low-pass filter and a zero amplitude reduced preamble signal.

The Examiner states that "Geile et al. clearly shows a zero amplitude reduced preamble signal (paragraph 0325 (zero values in unused FFT bin)), which is obtained by passing a specified synchronization preamble (paragraph 0325 (preamble)) through an ideal low-pass filter (paragraph 0325 (zero values in unused FFT bin)) in the synchronization signal generator to reduce a signal component to near zero amplitude within a time domain (paragraph 0325 (zero values in unused FFT bins, resulting in no power being transmitted on that particular frequency))." However, the Applicant respectfully disagrees.

Paragraph 0325 of Geile et. al. concerns the manner in which an equalizer of an integrated service unit (ISU) is able to determine an appropriate process state, namely, whether the equalizer should be in a search mode or in an acquisition mode. As stated in paragraph 0325, "Search mode is based on the amount of power present on a channel. Transmitter algorithms will place a zero value in unused FFT bins, resulting in no power being transmitted on that

particular frequency. At the receiver, the equalizer will determine that it is in search mode based on the absence of power in the FFT bin."

Placing a zero value in unused Fast Fourier Transfer (FFT) bins for use as a code that indicates a process state, as taught by Geile et al., is entirely different from the teachings of the present invention. The present invention recites, in claims 1 and 7, reducing a signal component to near zero amplitude within a time domain to obtain a zero amplitude reduced preamble signal. Claims 1 and 7 thus require that a non-zero amplitude signal component is reduced to a near zero amplitude. Such a reduction in an amplitude of a signal component is not taught or suggested by Geile et al.

In Geile et al., there is no non-zero amplitude signal component that is subsequently reduced to a near zero amplitude. Before a zero value is placed in an unused FFT bin, the bin is simply empty, and includes no value. Geile et al. does not teach that "unused FFT bins" include any form of non-zero amplitude signal component. However, both independent claims 1 and 7 of the present application include the specific limitation of reducing a signal component to near zero amplitude within a time domain.

As known by those having ordinary skill in the art, "frequency bins" as described in paragraph 0325 of Geile et al. are generally represented by vertical lines at a specific frequency on a power versus frequency graph of a time domain signal. The "unused FFT bins" of Geile et al. therefore must refer to frequency values that have no power value associated with them. Thus there is no signal component in an "unused FFT bin" that can be reduced to a near zero amplitude. Accordingly, the portions of Geile et al. cited by the examiner cannot teach or suggest the limitations of the present independent claims 1 and 7 concerning reducing a signal component to near zero amplitude within a time domain.

The Examiner also cites Geile et al. at paragraph 0277 as teaching the limitation of the present claim 7 of "...a synchronization position, which is shifted from a peak value position by a specified amount of time...." However, that

paragraph of Geile et al. simply refers to binary phase shift keying (BPSK) as a preferred modulation technique for control data. BPSK is a well know modulation technique, but the mere reference to that technique in Geile et al. does not teach or suggest the explicit shifting of a synchronization position "from a peak value position by a specified amount of time, in accordance with the determined cross correlation" as defined in the present claim 7. The Examiner has provided no explanation for how the use of BPSK teaches the above limitation of claim 7, thus the Applicant asserts that the Examiner has not established a prima facie case of obviousness concerning that limitation.

The Examiner appears to have accepted the Applicant's previous arguments that independent claims 1 and 7 are not obvious in light of Yasotharan et al. in view of Branlund et al. (U.S. Patent Publication No. 20030086366), and in view of Kokkonen et al. (U.S. Patent No. 6,606,296). Applicant has reached this conclusion as the references to Branlund et al. and Kokkonen et al. are no longer cited against the present application. The present office action states "The Examiner has modified the response with a new reference which combines with Mashinsky [*presumably this is an error and the Examiner intended to refer to Yasotharan et al.*] to provide 'use a low-pass filter to reduce a signal component to near zero amplitude', 'synchronization position is shifted from a peak position by a specified amount of time'." However, the arguments above clearly demonstrate that the new reference of Geile et al. does not disclose or suggest the limitations of claims 1 and 7, which the Examiner acknowledges are missing from Yasotharan et al. The Applicant therefore again respectfully submits that independent claims 1 and 7 are in proper condition for allowance.

The pending dependent claims 2-4 and 8-10 were rejected under 35 USC 103(a) as being unpatentable over various combinations of Yasotharan et al., Geile et al., Wu et al. (U.S. Patent Publication No. 6850481), and Klank et al. (U.S. Patent No. 6226337). Claims 2-4 depend from claim 1 and claims 8-10 depend from claim 7. For at least the reasons given above it is submitted that

independent claims 1 and 7 are allowable and therefore claims 2-4 and 8-10 that depend respectively from claims 1 and 7 should now be passed to allowance.

Any remarks made herein with respect to a given claim or amendment is intended only in the context of that specific claim or amendment, and should not be applied to other claims, amendments, or aspects of Applicant's invention.

The applicant asserts that the application is now in condition for allowance. Reconsideration and allowance of the application is respectfully solicited. If the Examiner believes that there are any informalities which can be corrected by Examiner's amendment, or in the event that the Examiner deems the present application non-allowable, a telephone call to the undersigned is respectfully solicited. Please charge any fees associated herewith, including extension of time fees, to 50-2117, Motorola Inc.

Respectfully submitted,
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